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Editor - Captain L. B. Marshall, MC, USN (RET)

A Christmas Message

To: All Hands,
Medical Department of the Navy

Together we have just passed through another year fraught of course with its share of perplexities and challenges. Yet the year's end finds the majority of us, I am sure, with more cause for gratitude than regret. Though the future into which we look is never certain, we are privileged to observe this Christmas at least under a brighter prospect for peace.

From the home fireside of the Medical Department the outlook seems less baffling than it was at yuletide twelve months ago. Our age-old tradition of professional integrity, courage in adversity, compassion for our brothers in arms, and faithfulness to their interests and welfare is, as ever, strong. We have learned to honor that tradition and our predecessors who engendered it. We are sure that these long-espoused values will endure, that we shall not fail to surmount such obstacles as we are certain to encounter along our forward course, and that additional bright chapters will be written by the personnel of the Medical Department incident to their support of the fighting defenders of peace and freedom.

I have now been associated with the Navy and Marine Corps for over thirty eventful years. That association has inspired and deepened my abiding faith in all of you and a warm sense of good will towards you all. May this faith and good will radiate out to you wherever you may be and to our friends everywhere, especially at this season, and in the days to come as well.

In this spirit I extend to you my heartiest best wishes for a Merry Christmas and a Happy New Year.

LAMONT PUGH
Rear Admiral (MC)
Surgeon General, U. S. Navy

25 December 1953

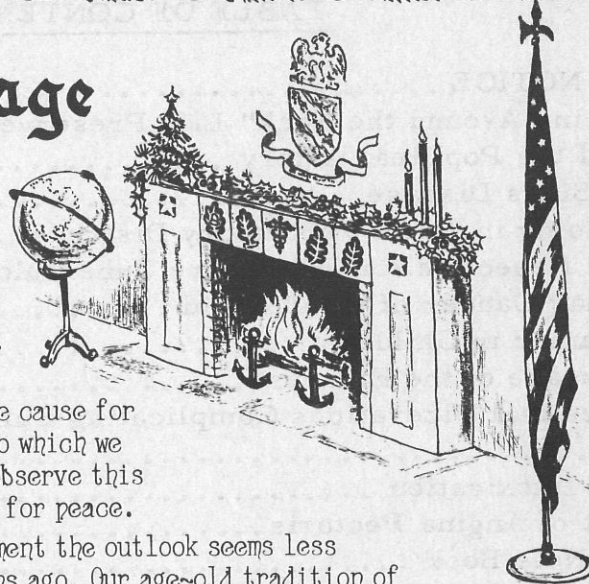
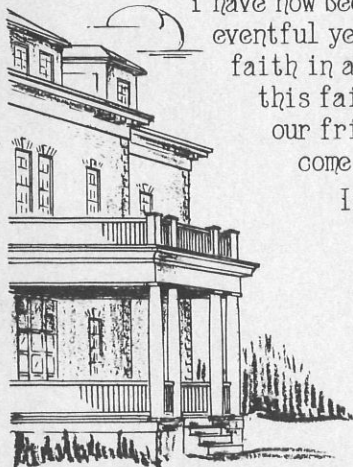


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* * * * *

An Observed Danger in the Use of "Around the Neck" Type of Life Preservers

During open sea tests in the Joint USAF-USN Comparative and Operational Suitability Test of Life Preservers, a hazardous situation was observed to exist for users of the around the neck type of life preservers. These dangers have been described in a report of these tests.

The "around the neck" type of life preserver, such as the U.S. Navy standard type MK II, the USAF standard type B-5, and Air Force experimental type B-8, support the survivor in the water by his neck or by support on the mandible and occiput. The harnesses of these jackets, no matter how they are adjusted, do not support more than a fraction of the body weight for any appreciable length of time, particularly in rough water. Inflation of these jackets produces an immediate and marked pressure about the neck which comes as a surprise and may produce panic or distress. This pressure on the neck is accentuated when these preservers are used in conjunction with an anti-exposure suit because the buoyancy of the suit forces the preserver in against the neck. There is an immediate attempt on the part of the survivor to relieve this neck pressure by grasping the side of the preserver and pulling it down and outward. However, in the open sea, when wave action is only moderate, a man must use his hands to maintain stability in an upright position and the difficulty in doing this and at the same time protecting the neck is very distressing.

In one instance, a subject in cold water open sea tests wearing the quick-donning, anti-exposure suit, type R-1, with the B-8 life preserver experienced severe difficulty due to pressure about the neck. Rough water and his anti-exposure suit gloves prevented him from completely relieving this pressure as had been done in previous water tests, and prevented him from grabbing a line or in any way cooperating with those who went to this relief. He became unconscious during the very difficult rescue and was in

shock for about 30 minutes after being removed from the water. He responded to anti-shock therapy but required oxygen for an additional 30 minutes to overcome a stridorous respiration. Body temperature was never below 98° F. and the subject stated he was adequately protected by the anti-exposure suit and did not suffer from cold. He was in the water for a total of 6 minutes. This episode confirmed previously observed difficulties with the B-8 preservers and further tests involving the use of this preserver were abandoned in the interest of safety.

During the course of this project, several subjects, including expert swimmers and former underwater demolition personnel, became panicky or showed distress immediately after inflating one of the "around the neck" type life preservers in open sea tests. This was true almost without exception in the case of the B-8 life preserver and to a lesser degree with the MK II and B-5. In several instances, the subject was swimming very successfully before the life jacket was inflated and, paradoxically, became panicky and in distress after the life jacket was inflated. Many subjects, while wearing the inflated "around the neck" type jackets, were observed to have flushing of the face and engorgement of the head veins. This was never noted with the underarm type of life preserver.

These difficulties may be due to the disturbance of several physiological mechanisms. One of the most important of these is the carotid sinus reflex. The carotid sinuses play an important role in the regulation of cardiac rate and arterial blood pressure. Compression of the carotid sinus, sufficient to raise the pressure within the sinus may result in a significant slowing of the heart rate and vasodilatation with attendant fall in blood pressure. The decrease in blood supply to the brain may cause a fainting spell. There is marked individual variation of susceptibility to carotid sinus pressure and abnormally sensitive individuals will collapse (lose consciousness) as a result of brief, moderate pressure on the lateral aspect of the neck.

In addition to initiating a carotid sinus reflex, lateral pressure on the neck can interfere mechanically with cerebral circulation by inhibiting venous return of blood from the head. Blood enters the cranium through the internal carotid arteries, which are thick walled, and the vertebral arteries, which are protected by the vertebrae, so that moderate external pressure on the neck does not decrease the inflow of blood to the brain. The blood is returned from the brain through the dural sinuses to the internal jugular veins. These veins are thin walled and easily collapsible. External pressure on the neck may partially constrict the jugulars and inhibit venous return, resulting in increased intercranial pressure and further decreasing the blood flow to the brain.

In a few cases with the B-8 life jacket, there is anterior as well as lateral neck constriction sufficient to cause some respiratory embarrassment due to pressure on the trachea or larynx. The stridorous respiration, which was noted in the cold water open sea tests, was attributed to some laryngeal spasm resulting from this pressure.

These observations indicate that there is a real danger in the open sea use of any type of floatation gear which supports the survivor by the neck and that even the U.S. Navy standard MK II and the U.S. Air Force B-5 jacket may be hazardous, particularly for certain individuals. (Research Report, Special Report No. 53-19, U.S. Naval School of Aviation Medicine, NAS, Pensacola, Fla.)

* * * * *

Surgery of the Popliteal Artery

Several collected series of traumatic injuries to blood vessels indicate that the popliteal artery is one of the most commonly injured vessels. Others have reported the popliteal artery as being second only to the thoracic aorta in the incidence of aneurysms, regardless of their etiology.

The treatment of popliteal lesions presents a serious management problem. This artery is one of the most vital to limb survival. It has been recorded that injury to the popliteal artery results in gangrene in from 45 to 100% of the cases when the vessel is ligated immediately, and vascular insufficiency is a common sequel when the limb survives. When the artery is damaged and a pulsating hematoma results which expands or bleeds subsequently, or when circumstances dictate ligation a few days after injury, gangrene is less likely to occur. If the pulsating hematoma contains itself until a false aneurysm develops and the artery is ligated some months later, the danger of gangrene is remote.

Injury to the popliteal artery occurred in 26 of the 150 traumatic vascular lesions treated at Walter Reed Army Hospital within the past 2 years.

Two approaches to the popliteal lesion were used. The first, a posterior approach, was made with the patient face down and the knee slightly flexed. The skin was incised by an offset or modified Z or S type incision parallel to the semimembranosus and semitendinosus tendons, curving along the popliteal crease, then downward to the lateral head of the gastrocnemius. The popliteal fascia was then opened in the midline. The popliteal fat was dissected carefully and the tibial nerve isolated and retracted laterally. The vessels were then approached proximal to the lesion for prevention of hemorrhage.

The second approach, used mainly for higher popliteal lesions, was a medial one and made with the knee slightly flexed and externally rotated. The incision was made on the medial side of the thigh just anterior and parallel to the distal portion of the sartorius muscle. The sartorius was retracted posteriorly, with care being taken to protect the saphenous nerve. Dissection was carried back to the adductor magnus tendon to the origin of the popliteal artery, and the tendon was sometimes cut to afford better isolation of the artery. The vessel was secured as in the posterior approach, and dissection was carried both proximally and distally toward the lesion.

In a few instances, after the vessel was dissected free, the laceration was so small that simple repair of the laceration was possible. Such repair is usually not feasible because the damage to the vessel extends beyond the actual laceration. Some surgeons believe that a laceration encompassing three-fifth of the vessel circumference can be safely repaired. The authors prefer to excise such lesions completely with end-to-end anastomosis.

Whenever the defect is so great as to preclude direct anastomosis, then anastomosis by interposition of a graft is required. The authors have used both homologous arterial bank grafts and fresh autogenous vein grafts for this purpose. However, they prefer autogenous vein grafts.

Still another, but infrequently utilized, method of repair, is ligation and division of the fistulous tract as in patent ductus arteriosus operations. Whereas this method preserves both artery and vein, it can rarely be employed because of the size of the fistulous tract and the extent of damage to the artery wall.

By the use of reconstructive technics, the waiting period and hospitalization have been greatly reduced, sympathectomy has rarely been necessary, and arterial insufficiency has been reduced to practically zero. (Ann. Surg., Nov. 1953, Brig. Gen. S.F. Seeley, MC, USA, Lt. Col. C.W. Hughes, MC, USA, and Maj. E.J. Jahnke, Jr., USAF(MC); Surgical Service, Walter Reed Army Hospital, Washington 12, D.C.)

* * * * *

Pilonidal Sinus Disease

A questionnaire was sent to all members of the American Proctologic Society and 51.5%, representing 25,320 cases of pilonidal sinus disease replied. The results of this questionnaire are tabulated. In addition to the material gathered from this questionnaire, 123 cases treated at the Lahey Clinic during the years 1946 to 1952 were reviewed.

The authors believe that this survey of the American Proctologic Society, when compared with previously reported experiences, demonstrates a very definite trend in the treatment of this condition. The consensus of The Society at the present time is that there is no single operation or technic that can be adopted for all pilonidal surgery. The ideal treatment must be suited to the patient and to the local condition. However, the tendency at the present time is to avoid massive block excisions with their excessive removal of healthy tissue. Such a procedure often results in prolonged healing time, disability, and, frequently, disfiguring and painful scars.

One of the common pitfalls, and one which many, particularly those who have not had a special interest in this condition, have failed to appreciate, is that the treatment of a pilonidal sinus is not a minor surgical procedure. Sufficient attention has not been given to basic surgical principles

in its treatment. When the frequency with which this disease occurs and the economic factors involved, as expressed in the number of days lost, are considered, it can be appreciated that the definitive treatment of pilonidal sinus disease is far from an insignificant surgical problem.

The causes of failure in the healing of these wounds and the high incidence of recurrence following definitive treatment have not been adequately understood. When a closed technic is employed, pilonidal sinus wounds fail to heal or break down following primary healing because of failure to eliminate dead space, to prevent the introduction of infection, to preserve an adequate blood supply to the area, to close such wounds without tension, to avoid trauma, or to maintain the part at rest during the period of healing. In the open methods the prevention of bridging over of the wound, of the formation of excessive granulation tissue, and of the introduction of infection are of the utmost importance. Pilonidal sinus disease is found in a region of the body most difficult to sterilize and to keep free from moisture and bowel contamination. It is an area with a notoriously poor blood supply and is subject to repeated trauma by the mere acts of sitting or walking. These factors are particularly important in the obese or hairy individual in whom pilonidal sinus disease so frequently occurs.

It is the authors' contention that the area of a pilonidal sinus wound can be sterilized and kept relatively dry, clean, and free from infection; and that the blood supply will be adequate for prompt healing if minimal amounts of tissue are removed, if dead spaces are eliminated, and if the area is immobilized, kept free from invaginated hair follicles, and protected from trauma during the immediate postoperative period. If these principles are adhered to, the incidence of failure to heal or recurrence following any of the open or closed methods of treatment of pilonidal sinus disease will be minimal.

There can be no question as to the necessity for immediate incision and drainage of the pilonidal cyst or sinus with an acute abscess. It is important, however, in planning this incision and drainage not only to plan the incision so that adequate drainage is obtained but also to consider the method of definitive treatment which will be employed later. A few of the replies mentioned an immediate block excision of an inflamed mass, allowing the wound to granulate secondarily. It is true that the necessity for a second operation is thus eliminated but the importance of not removing excessive amounts of tissue with resulting mutilating scars was repeatedly emphasized in the answers to the authors' questionnaire.

For the patient with the most common type of pilonidal sinus disease, one or more draining sinuses without evidence of acute infection, the majority of the members prefer some type of an open operation. The largest group prefers simple excision, allowing the wound to granulate in secondarily. A second group, almost as large, emphasizes a limited excision, a simple unroofing with the postoperative use of cauterizing agents, the curetting of the wound with dry gauze or a partial closure. A third group, also nearly as

large as the others in number of patients treated, employs the marsupialization technic. In this procedure the base of the sinus tract is left intact and the skin edges are sutured to this residual scar tissue. There were other special technics advocated by a few of the members. The method of Rogers (cautery excision) was mentioned. Injections of silver nitrate crystals and of other sclerosing agents find favor with a few. (Am. J. Surg., Nov. 1953, N. W. Swinton, M. D. and R. K. Markee, M. D.; Department of Surgery, Lahey Clinic, Boston, Mass.)

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Tracheostomy in Acute Ventilatory Distress

Elective and emergency tracheostomy for impending or acute obstruction of the upper airway is a surgical procedure with historic background and precedence.

An unobstructed airway is a clear-cut prerequisite to proper ventilation. Acute or impending ventilatory obstruction from tumors, inflammatory lesions, or trauma of the vocal cords and hypopharynx has been properly regarded as an indication for tracheostomy. Severe maxillofacial trauma, certain operations in the cervico-maxillofacial region, cervical emphysema, and bilateral paralysis or spasm of the vocal cords also constitute classic indications for tracheostomy.

More recently, tracheobronchial secretions have been recognized as a frequent etiologic factor in the production and persistence of obstructive anoxia. Mucus in the trachea can produce death from anoxia as easily as a tumor of the trachea, but fortunately it is a more reversible process.

The normal mechanisms for the removal of tracheobronchial secretions are often disrupted. Preoperative medication and anesthesia depress bronchial peristalsis, ciliary action, and the important cough reflex. During this period secretions must be removed for the patient. The same must be done for the unconscious patient. Postoperatively, thoracic or abdominal incisional pain and the indiscriminate use of narcotics inhibits spontaneous coughing unless strenuous measures are taken to encourage cough. In the absence of an effective cough, tracheobronchial mucus may accumulate and produce severe respiratory complications.

Severe injuries to the chest wall or an open pneumothorax lead to paradoxical respiratory movement and mediastinal flutter and make coughing particularly ineffective. In addition to the mucus and perhaps blood which cannot be expectorated, it is possible that there is actual increase in the volume of secretions produced by the respiratory epithelium due to reflex stimulation from the thoracic injury. Regardless of the exact mechanism, bronchial drainage is impeded. Chest wall pain, paradoxical respiration, and ineffective cough produce ventilatory distress.

The therapeutic approach to this problem should promote adequate respiration by measures which relieve the pain, paradox, and secretions. The judicious use of narcotics and intercostal nerve blocks usually will alleviate the pain.

The paradoxical motion of the chest wall has been managed by various types of chest wall support ranging from adhesive strapping to operative fixation of the fractured rib segments. Constricting types of chest wall support may dangerously diminish vital capacities already lowered by the thoracic injury. Operative fixation of the fractured rib segments will correct the paradox, but unfortunately imposes a major operative procedure on an already precarious situation. Therefore, effective conservative management for the paradox should abolish the obstructed airway which promulgates the violent paradoxical excursions of the chest wall and substitutes an unobstructed airway through which proper ventilation can occur with a more modest chest wall effort. If the obstruction is due to occlusion of a major bronchus by mucus plugs, bronchoscopy should be considered. More often, the atelectasis does not have a lobar or segmental pattern, but is distributed throughout the lung parenchyma. Nasotracheal suction, as described by Haight, has been an important contribution in this regard. This aspect of the problem may be handled if the Haight maneuver can be performed whenever required without exhausting the patient.

If pulmonary secretions cannot be managed by nasotracheal suction and bronchoscopy, ventilatory and respiratory distress will be apparent. This clinical syndrome can be prognosticated if audible rhonchi are heard in spite of measures taken to prevent them. There follows rather rapidly the dyspnea, tachypnea, tachycardia, diaphoresis, and beginning cyanosis so characteristic of obstructive anoxia. Tracheostomy has been invaluable in the prevention and treatment of such ventilatory distress secondary to obstinate secretions in the lower trachea and major bronchi.

Tracheobronchial secretions may cause anoxia in various other situations some far more frequent than thoracic trauma. In such situations tracheostomy should be considered seriously before and certainly during the development of anoxia regardless of the nature of underlying disease.

A second physiologic contribution of tracheostomy as demonstrated by Carter is the reduction in the volume of the ventilatory dead space. Normally the ratio of tidal air to dead space is 500:150. In thoracic trauma or cardio-respiratory disease, the tidal air is decreased in the presence of a constantly maintained dead space and the ratio may be reduced to 350:150.

By tracheostomy, the air inflow tract is moved from the nose and mouth to a lower level and a reduction in the respiratory dead space of approximately 100 cc. to a level of about 50 cc. is effected.

In incipient or actual ventilatory and respiratory distress from any cause, the improvement in oxygen-carbon dioxide balance from tracheostomy may be the critical factor in survival. Accordingly, tracheostomy should be considered in the prevention or treatment of both ventilatory and respiratory sufficiency.

Postoperatively, the air inspired through the tracheostomy tube should be humidified with saline. Oxygen may be added to the system by inserting a small catheter into the tracheostomy tube. Suction may be performed without injury to the trachea with a soft rubber catheter. Although tracheal aspiration may be done frequently, its duration should be short.

Tracheostomy is described as an important adjunct in the management of certain ventilatory and respiratory problems. Its present therapeutic value deserves wider application and its possibilities merit further investigation. (Brian Blades, M.D., and A.M. Salzberg, M.D.; Department of Surgery, The George Washington University School of Medicine, Washington, D.C., Read at the Sixtieth Annual Convention of the Association of Military Surgeons)

* * * * *

Segmental Resection for Pulmonary Tuberculosis

A series of 300 consecutive patients who had segmental resection for pulmonary tuberculosis have been followed for 1 to 5 years. Of these, 93.7% are living and well, 3.3% living with disease, and 3% are dead.

The main indication for segmental resection is the necrotic lesion. Necrotic lesions may be small, medium, or large and still confined to one or two segments of a lobe. Not only is the size of the necrotic focus important, but also its duration and especially the amount of associated exudative or pneumonic disease.

The duration of the lesion is significant because it is difficult in the chest film to distinguish the boundaries between shadows due to exudative, fibrotic, or necrotic disease. It may be reasoned, though not without an element of doubt, that if the lesion has been present in serial x-ray films for some time, it is predominantly a fibrocaseous lesion. In other words, the acute exudative or pneumonic elements have probably resolved. If, however, the shadow is being viewed for the first time this assumption may be inaccurate.

The size of the necrotic focus is important because the small foci are drained in most instances by small bronchi and the large ones are drained by large bronchi. It seems reasonable to suppose that the caseous material undergoing liquefaction will drain more easily through a large bronchus than through a small one, and perhaps it follows that it "spreads" more easily as well. These points require further proof.

Exudative disease can be expected to respond to conservative management and antibiotic therapy permitting the dimensions of the operative procedure to be reduced. Emergency operations have been successfully performed in the presence of acute tuberculous pneumonia, because of hemorrhage, cavity rupture, and extensive pneumonia "spreads," but in general, major thoracic procedures, including thoracoplasty, should not be done in the presence of significant exudative or pneumonic disease.

The ideal indication for segmental resection is the fibrocaseous lesion with or without a cavity and devoid of an exudative element. The focus should be of such size and duration that mature medical opinion is doubtful of the patient's future security.

The preoperative preparation is the same as for any major operation with special attention to laminography and especially the lateral laminography.

An anatomic segmental resection is done for moderate and far-advanced lesions. In minimal lesions a wedge resection or local enucleation is possible. Subsegmental resections may also be done anatomically.

Postoperative care must be vigilant. Patent airways (intratracheal suction), the control of pain, the use of antibiotics, and the obliteration of dead space by complete re-expansion of the lung using active suction and checked by frequent postoperative x-ray examinations are important to a successful result.

Tuberculosis is usually bilateral though not bilaterally active. Only the major active focus is removed by segmental resection. The importance of other foci is dependent upon the size and location. Anterior foci are less hazardous than those in a posterior position. (J. Thoracic Surg., Nov. 1953, 3207 Washington Blvd., St. Louis 3, Mo., J. M. Chamberlain, M.D., CAPT C. F. Storey (MC) USN, R. Klopstock, M.D., and C. F. Daniels, M.D.)

* * * * *

Present-day Cancer of the Thyroid

Recent experiences in the surgical management of a large number of patients with thyroid disease have emphasized the fact that carcinoma of the thyroid is being seen more frequently and its treatment has been undergoing needed changes in order to improve the end results. In spite of the fact that a considerable number of patients are seen who have a relatively low grade of thyroid malignancy, many are encountered with extensive malignant involvement leading to early death in spite of the use of the best combined surgical and radiation treatment. As a result of a considerable experience in the treatment of carcinoma of the thyroid at the Lahey Clinic, questions arose which the authors believed could be clarified by a review of recently treated patients. For example, in what percentage of cases can a clinical diagnosis of carcinoma of the thyroid be made? Can carcinoma of the thyroid exist without signs or symptoms? Is carcinoma of the thyroid increasing in frequency? What is the present incidence of carcinoma in discrete nodules and in diffuse nodular goiter? Has there been an appreciable increase in papillary tumors? What changes in surgical treatment have occurred? Should the number of radical neck dissections be increased?

In the hope of answering these and other questions the authors thought it would be worth while to review their experiences in the surgical treatment of a considerable number of patients operated upon during the last 2 years.

A consecutive series of 78 patients with carcinoma of the thyroid treated at the Lahey Clinic in 1951 and 1952 is reported. During this time 1,479 patients with thyroid disease were operated on; the over-all incidence of malignancy was 5.3%. One patient with carcinoma of the thyroid was encountered for each 10 patients with discrete or diffuse nodular goiter.

The clinical diagnosis of carcinoma was made preoperatively in less than half of all patients. A high incidence of carcinoma was encountered in discrete or solitary nodules of the thyroid. There were 156 patients with this type of goiter. Carcinoma was suspected in only 15 and encountered in 52, or 33.3%.

There are no diagnostic signs or symptoms of carcinoma of the thyroid in the early stage of its development. A high index of suspicion must be maintained for any nodular enlargement of the gland. It should be suspected, moreover, whenever the gland has increased rapidly in size or whenever the gland is hard and irregular. The fact that a clinical diagnosis is not established in a majority of cases is borne out by this series, because the diagnosis of carcinoma was definitely made or suspected in less than one-half of the cases in which it was found later. In 52 of the 78 patients with proved carcinoma a diagnosis of discrete adenoma was made, and in only 15 of these was a question of carcinoma included in the preoperative diagnosis. A diagnosis of diffuse nodular goiter was made in 13 cases; 11 of these were thought to be nontoxic and only 1 was suspected of being carcinoma. Two additional patients had diffuse nodular goiter with hyperthyroidism. In 11 patients carcinoma of the thyroid was apparent clinically.

Frozen-section diagnosis should be available at the time of operation in all cases of discrete nodules and would be helpful in operations for all nodular goiters.

Neck dissection was considered necessary in approximately half of all patients with carcinoma of the thyroid operated upon during this 2-year period. This procedure is indicated in any patient with a malignant adenoma which shows lymphatic invasion, in all patients with papillary carcinoma and in all patients with alveolar carcinoma. The increased use of radical neck dissection together with high-voltage x-ray therapy postoperatively may improve the end results in the treatment of carcinoma of the thyroid. In half of those patients in whom neck dissection was performed, the lateral cervical nodes were found to be involved.

Carcinoma of the thyroid is an extremely serious lesion and is frequently encountered if large numbers of thyroid patients are seen. In this series of 78 patients there was no operative mortality but 9 patients are already dead from malignancy less than 2 years after operation. (J. Clin. Endocrinol., Nov. 1953, R. B. Cattell, M. D., and B. P. Colcock, M. D.; Department of Surgery, The Lahey Clinic, Boston, Mass.)

Wilms' Tumor in Children

The material for this study is derived from 78,961 admissions to the James Whitcomb Riley Hospital for Children from 1925 to 1949 inclusively. Twenty-three consecutive cases of Wilms' tumor were observed during this 25-year period, of which 8 have survived and 15 are dead. There is little predilection for side or sex, although the authors' series does not bear this out. Seven were females and 16 were males. The left side was involved in 14 cases, the right in 9. Fifteen of the authors' cases were 3 years of age or less, while 8 were over 3 years.

Diagnosis is not difficult. A loin mass in a child should arouse suspicion. Employment of the excretory pyelogram often is diagnostic. Moreover, it will determine the integrity of the opposite kidney. Distortion of the calycine pattern by pressure, with medial, anterior, or inferior displacement is the rule. Superior displacement may occur but is uncommon. Lateral displacement is rare. Retrograde pyelography may be and often is utilized when any doubt exists. Other abdominal lesions must be excluded in the differential diagnosis. Pyelography usually excludes hydronephrosis, the most frequent urinary tract tumor in children. Neuroblastomas often have a characteristic peppering of calcific deposits, and are less apt to distort the calycine pattern. Pyelographic distortion by adrenal neoplasms may simulate renal embryoma, although usually pelvic displacement is downward and outward with little calycine compression. The differential diagnosis of a renal cyst may be difficult and confirmed only by exploration. Radiotherapy may be of some diagnostic value in such a case. Of course polycystic disease is bilateral and characteristic pyelographically. The problem of splenomegaly is solved at pyelography, as a rule.

The authors believe that success in the treatment of Wilms' tumor is a product of four factors. First, early diagnosis is of primary importance. It has been shown repeatedly that success is inversely proportional to patient age. Second, aggressive therapeutic measures designed to bring the patient to nephrectomy at the earliest possible date compatible with complete removal of the tumor is desirable. This may include a long, short, or no preoperative radiation period. Third, the transperitoneal nephrectomy or thoraco-abdominal nephrectomy if the tumor remains large with radiation, though difficult to support statistically, is the approach of choice in the majority of instances. Not only does it afford an early pedicle ligation, but also presents a wider field allowing exploration for abdominal metastases. Finally, routine postoperative radiation at the nephrectomy site and to any metastatic area will, in the authors' opinion, reward the therapist. (J. Urol., Nov. 1953, R. A. Garrett and H. O. Mertz; Department of Genito-Urinary Surgery, Indiana University Medical Center, Indianapolis, Ind.)

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Cystic Disease of the Kidneys

Any cyst of the kidney is of potential clinical significance. However, because it is primarily the patient with congenital polycystic disease who constitutes a therapeutic problem for the physician, this discussion will be limited to that entity.

Polycystic disease of the kidneys is a relatively rare congenital malformation characterized anatomically by an excessive number of small and large cysts distributed throughout the parenchyma of the kidney and projecting into its surface. In contradistinction to solitary cysts, which tend to be unilateral and localized most often to the lower pole of the kidney, polycystic disease is probably always bilateral. The often great disparity in the size and degree of involvement of the two kidneys, and the observation that it may not be until years after removal of the polycystic kidney that its mate becomes clinically enlarged, presumably account for the reported incidence of 8% of polycystic kidneys being unilateral.

Polycystic kidneys may be conveniently separated into the infantile and adult types. The infantile type becomes apparent shortly after birth and frequently accompanies other developmental anomalies such as spina bifida, clubfoot, and encephalocele. The adult type rarely produces symptoms before the third or fourth decade of life and is not regularly associated with developmental anomalies other than cysts of the liver which are not present in about 30% and cysts of the pancreas which are present in 9% of the patients.

The importance of heredity in the development of polycystic renal disease is well documented. The involved gene is apparently dominant and may be transmitted by either sex. The precise embryologic defect has not been identified. Three theories are most commonly advanced: (1) Ribbert's theory, (2) Kampmeier's theory, and (3) Allen's theory.

The average age of onset of symptoms is about 40 years, with the average age of death being 50 years. It has been estimated that 45% of patients live less than 4 years after the onset of symptoms, 25% live more than 10 years, and 9% live more than 20 years. The average life expectancy, therefore, is somewhat better than 50 years, and the average patient will probably live 10 years after the onset of symptoms and 2 years after the onset of azotemia. If the patient reaches the fifth decade of life without the development of renal insufficiency, he will probably enjoy a normal life span. Statistics such as these are often quoted and may be of some general value, but can scarcely be applied with any assurance to the individual patient. For prognostic purposes it is far better to chart the rate or progression of the disease by evaluating the renal function, cardiac status, blood pressure, and appearance of the fundus oculi at regular intervals. Barring an overwhelming complication, it is the rate of progression of the disease which determines the duration of life.

Treatment of polycystic renal disease can be conveniently separated into medical and surgical phases. Although it is clear that one should supplement the other, the dividing line between the two has been the subject of much debate, and the exact indications for surgical intervention remain unclassified. Present evidence seems to favor a conservative approach in which medical management forms a constant base line to be altered only by specific indications for surgical intervention. (Postgraduate Medicine, Nov. 1953, R. Birchall, Ochsner Clinic, New Orleans, La., and M. Harvard)

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Gastrointestinal Ulcerations Complicating Burns

Twenty deaths have occurred in 600 burned patients treated at Brooke Army Medical Center during the past 3 years. At autopsy, 5 of the 20 patients who died had gastrointestinal ulcerations. This high incidence is evidence against the general impression that gastrointestinal ulcers after burns are less common now than they were formerly. The true incidence of this complication cannot be assessed because ulcers may occur and heal without evidence of their occurrence.

The pathogenesis of these ulcers remains a subject of controversy, and the authors' clinical data fail to support or argue against the theories that have been proposed. Sepsis and hemoconcentration have been incriminated as important causative factors, but in this series neither of these could be consistently correlated with ulceration. Both adrenocortical hyperactivity and failure have been related to gastrointestinal ulcers. In the authors' series, morphologic changes in the adrenal glands were highly variable and apparently unrelated to the incidence of ulceration. In 12 of the 22 cases reviewed, gastrointestinal ulcerations occurred after severe extensive burns, the average area involving 57%, but in the 8 other patients who died, the burns were of very limited extent.

It should be noted that in patients in whom severe massive hemorrhage was the predominant manifestation of ulceration, the ulcer was in the posterior aspect of the first portion of the duodenum, and exsanguination occurred from a major branch of the gastroduodenal artery. An emergency operation was performed in only 1 of the 22 cases reviewed. This patient survived. Harkins reported 6 cases before 1942 in which an operation was performed several weeks after the onset of symptoms: in 5 cases, the patients survived. Although the surgical risk attending emergency gastrectomy in a burned patient who has gastrointestinal bleeding presents a formidable obstacle, surgical intervention must be considered in view of the high fatality rate reported with conservative therapy. In almost every case reviewed, the pathologic description of the ulcerative lesion on the posterior wall of the duodenum revealed an acute ulcer with edema and a minimum of scarring. Subtotal gastrectomy is technically less difficult in acute ulcers of this type than in

chronic ulcers. Although multiple lesions of the gastrointestinal tract were present in 12 of the 22 cases reviewed, in only 2 of the 10 patients who had severe hemorrhage were the lesions multiple. It would appear that it is wise to assume that the lesion is in the posterior wall of the duodenum and that an emergency operation to control the hemorrhage may be indicated if a massive gastrointestinal hemorrhage occurs after burns. (Surgery, Nov. 1953, Capt. A. E. Weigel, USAF(MC), Maj. C. P. Artz, MC, USA, Capt. E. Reiss, MC, USA, Capt. J. H. Davis, MC, AUS, and Col. W. H. Amspacher, MC, USA; Surgical Research Unit, Brooke Army Medical Center, Fort Sam Houston, Tex.)

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Backache

The enigma of the "poor aching back" is well known to the physician who practices military medicine. During the Korean war a large number of patients were admitted to Tokyo Army Hospital with the chief complaint of backache with and without associated leg pains. The majority of these patients came from military units actively engaged in combat, or from installations directly in support of these units. Almost without exception they were transferred to the hospital from station and evacuation hospitals where the diagnosis of some type of medical, orthopedic, or neurologic disease had been made. As increasing numbers of these patients were seen, it became apparent that objective evidence of significant medical, orthopedic, or neurologic disease was lacking in a large percentage of them. Furthermore, the symptoms and signs exhibited by many suggested that the backache was a symptom of psychiatric disease; consequently, previous treatment and disposition, in many instances, was based on what the authors considered to be an incorrect diagnosis.

The clinical records of 122 patients seen in Tokyo Army Hospital during a 5-month period were reviewed and no cases were excluded from this study. These represent consecutive cases that came under the care of 7 medical officers. Each patient was seen by one or both of the authors. During the period of time in which these patients were hospitalized it is estimated that the majority of admissions with the chief complaint of backache were studied by the authors on the medical service. As specific exceptions patients with proved compression fractures of the spine and those with penetrating back injuries were usually admitted under the care of the orthopedic or neurologic surgeons.

The diagnosis was made in each case by a history, physical examination, and pertinent laboratory studies. Each history included a detailed analysis of the chief complaint and associated symptoms. Attention was given to the mode of onset and to the duration of the illness. Any relationship between mechanical and emotional factors and the appearance and severity of symp-

toms was noted. An attempt was made to estimate the patient's desire for recovery and return to duty. Inquiry was made concerning symptoms relating to the various organ systems. Family and social histories were recorded.

The physical examinations included specific tests designed to determine the functional integrity of the spine and associated structures. The general contour of the low back, including the degree of lumbar lordosis or scoliosis, was noted. Each patient was instructed to bend over and touch his toes with knees stiff. He was asked to flex laterally, forward flex, and extend his spine. The legs were passively flexed, extended, and rotated at the hips. Stress was applied by the examiner to the sacro-iliac joints. Straight leg raising with the patient lying and sitting was performed by the examiner. The sciatic notch region was palpated. A rectal examination was done. Neurologic examination included the testing of gait, motor power, reflexes, and sensation.

A blood sedimentation rate, white blood cell count, red blood cell count, hemoglobin analysis, differential blood smear, and urinalysis were done in every case. Roentgenograms were taken of the involved parts. The cerebro-spinal fluid was examined when definite neurologic symptoms or signs were present.

In this study the 122 cases have been classified in 3 major categories: 1. Significant objective evidence of local disease of the back. 2. No significant, objective evidence of local disease of the back. These cases have been further subdivided into two groups: (a) history of trauma or strain preceding present illness; and (b) no history of trauma or strain preceding present illness. 3. Unclassified.

Significant, objective evidence of local disease of the back (orthopedic, neurologic, or medical) was found in 47 or 38.5% of the 122 patients.

No compelling evidence of local disease of the back was found in 66, or 54.2% of the 122 patients.

It is pertinent to mention that frequently one or more physicians had the distinct impression that a patient was deliberately manufacturing his illness in a calculated manner, i. e., malingering. Such an impression was often hard to escape, especially when the gains afforded the patient by his illness were so great. This diagnosis was not made in this series of patients for undeniable proof of malingering was and is difficult to obtain. Some of the cases thought to have hysteria were very likely malingering. Characteristically, these patients had in the past failed to improve on bed rest and physiotherapy. Once the diagnostic studies were complete, individuals found to have no significant, objective evidence of local disease of the back were told just that. Detailed explanations of the origin of pains were avoided. They were usually told that psychological mechanisms, not structural disease, were responsible for their symptoms. The fact that they had pain was not denied, but they were informed that they must live with the symptoms and return to duty because no medical disability existed. An attempt was made

to be firm but understanding. Although some patients accepted this fairly well, the usual attitude of patients in the group without evidence of local back disease was one of a refusal to accept the diagnosis.

Backache is generally conceded to be a significant military medical problem. The frequency with which the symptom has been encountered in military personnel has varied considerably in several reported studies. McCollum, of the Royal Army Medical Corps, reported that 50 (9.6%) of 520 out-patients had backache as the chief complaint. In a unit of 700 men not in combat, Stukey, of the Australian Army, encountered 40 cases of backache during a period of 3 months. The rate of turnover of personnel in the unit was not reported but disregarding that factor, 5.7% of personnel sought medical care for the treatment of backache. Shands stated that 15-35% of out-patients and 10-30% of in-patients in United States Air Force Hospitals during World War II suffered from backache and in 2 Army general hospitals the incidence of admissions for backache was .66% (320 of 47,800 patients) and 3.8% (258 of 6,800 patients) respectively.

Over half of the patients in this study were considered to have no significant objective evidence of local disease of the back and had positive evidence of a neurosis. It is possible, of course, that local back disease was also present but for clinical purposes the authors believe that these cases were best managed in the Army by emphasizing the absence of so-called "organic disease" and medical disability, minimizing the symptomatology, and stressing the psychiatric aspect of the illness and the importance, indeed, necessity of returning to duty. It should also be emphasized that the mere absence of significant objective evidence of local disease of the back does not in itself warrant a diagnosis of a psychiatric illness. Neurotic symptomatology and signs of the sort noted in this study must be present; for a psychiatric diagnosis arrived at by the exclusion of local disease alone is usually in error. In this study, the authors placed such cases in the "unclassified" group, treated them conservatively and returned them to duty without a definite diagnosis. The authors believe that if progressive, underlying disease of the back were present it would certainly have manifested itself over the course of months by more obvious objective signs and the disability could then be re-evaluated in the light of the new findings. Unfortunately this study lacks adequate follow-up data to show how often this occurred. No such example was encountered in a 5-8 month follow-up period.

It has been mentioned that the coexistence of significant, objective evidence of local disease of the back with symptoms of a neurosis creates a difficult problem in deciding which factor is primarily responsible for the disability. The authors know of no simple way to resolve this dilemma and each case must be evaluated individually. Although in this study the authors might have classified such patients under the heading, "Significant, objective evidence of local disease of the back," they often suspected that the psychiatric disease was the more important and attempted to minimize the seriousness of the situation to the patient while treating him for the local back disease.

It is concluded from the study that a reasonable clinical diagnosis can usually be made by relatively simple means; that in a military environment, such as was present in this study, the majority of cases show no significant, objective evidence of local back disease, but rather of psychiatric disease; that most of these cases without true medical disability cling to the symptoms of backache despite medical and psychiatric treatment; and that they can and should be returned to duty promptly. (Military Surgeon, Nov. 1953, Capt. P. R. Dodge, MC, USA, Massachusetts General Hospital, Boston, Mass., and Col. E. A. Cleve, MC, USA, Letterman Army Hospital, San Francisco, Calif.)

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Chlordane Intoxication

Chlordane is a recently developed insecticide with the empiric formula $C_{10}H_6Cl_8$.

The commercially available technical product is not a pure substance, but contains in addition to chlordane some 5 or 6 closely related compounds whose respective proportions may vary. The formulations of technical chlordane include oil solutions, emulsions, dusts, and wettable powders. These are used extensively in the eradication of such household pests as flies, cockroaches, fleas, and mosquitoes as well as agricultural crop enemies such as grasshoppers and certain beetles. Because of the widespread domestic, industrial, and agricultural distribution of the various preparations of chlordane, cases of accidental poisoning may be expected from time to time.

As with other chemical poisons, the events to be expected in a case of acute poisoning by chlordane depend upon the dose absorbed. On the advice of Lehman, chlordane and its closely related compounds in a solution of technical chlordane are to be considered together in the estimation of the dose administered. The amount of chlordane ingested in some reported cases is calculated to have been 40% of 4 gm., or 1.6 gm. (32 mg. per kg.). It should be assumed that the amount actually absorbed was less than this, but how much less cannot be definitely established. In any case, the amount absorbed was sufficient to cause transient minor central nervous system changes followed by convulsions, from all of which the patient recovered spontaneously. In a case of poisoning in an infant previously reported, it was necessary to administer a barbiturate for the control of convulsions. Two cases suggest that acute poisoning in man by ingestion of a single dose of chlordane results in a series of central nervous system changes that culminate in convulsions. It is likely that a dose insufficient to produce a central nervous system change is also insufficient to produce a significant change in other organ systems. On the basis of results of acute toxicity studies in animals, it may be predicted that doses large enough to produce severe convulsions will also cause hepatic necrosis. Because the adminis-

tration of chlordane over prolonged periods has produced damage of the renal convoluted tubules, this change needs to be borne in mind as a possibility in cases of poisoning among humans.

It may prove possible to estimate with satisfactory accuracy the dose of chlordane absorbed from the level of organically bound chlorine in the urine. Because of the obvious advantage of knowing the absorbed dose at the earliest possible time, it is hoped that the relationship between dose and the urinary level of organic chlorine will be more thoroughly studied in any future cases. The practical application of routinely determined urinary organic chlorine levels as an industrial hygiene control measure among workers who are regularly in contact with chlordane is strongly suggested.

Barbiturates, especially those that are detoxified in extrahepatic tissues, may be considered to have established value in the convulsive state produced by chlordane. It is possible at this time only to assume that the usual therapeutic measures effective for hepatic necrosis will be useful in the more advanced stages of poisoning. The occurrence of lower nephron nephrosis following a single dose of chlordane is not predictable from experimental data or case reports now at hand, but this serious change should always be borne in mind. The reported case, as well as one previously reported, suggests that the ingestion of 10 mg. of chlordane per kilogram of body weight, and perhaps less, is an indication for gastric lavage at the earliest feasible time. (J. A. M. A., Oct. 24, 1953, J. L. Dadey, M. D., Department of Medicine, University of Pittsburgh Medical Center and A. G. Kammer, M. D., Graduate School of Public Health, University of Pittsburgh, Pittsburgh, Pa.)

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Treatment of Angina Pectoris

Despite great advances in the management of angina pectoris, nitroglycerine remains the preparation of choice in the treatment of the acute attack of angina pectoris. Recent investigations indicate that pentaerythritol tetranitrate may be of some value in diminishing the frequency of attacks of chest pain. The efficacy of the xanthines remains controversial more than 50 years after they were first introduced. These drugs seem to be capable of relieving paroxysms of angina pectoris though their actions are variable and unpredictable. Papaverine appears to produce little subjective or objective improvement in the majority of patients with this syndrome. Hormonal therapy is rarely employed because of the uncertain results obtained. Khellin has been used with encouraging results in some series, though distressing toxic reactions to the drug are not uncommon. Better purification of visammin seems desirable. The thiourea derivatives have been replaced by radioactive iodine in the management of severe angina pectoris, owing to the greater ease in which a hypometabolic state is es-

tablished with this agent. The development of myxedema is controlled by small amounts of thyroid. The chief use of anticoagulants appears to be in cases that demonstrate impending coronary occlusion. Experience with the use of blocking agents is limited, and the use of these drugs may be associated with unpleasant side reactions. The importance of weight reduction in the obese patient has gained recent support. Other measures, quite popular at one time, such as the use of vitamins, cytochrome C, and irradiation to the spine and adrenal glands, have been discarded.

The surgical treatment of angina pectoris is considered only when medical management has failed in a patient who is incapacitated by frequent paroxysms of pain. Of the procedures employed for interruption of pain pathways from the heart, paravertebral alcohol injection is the operation of choice in patients with angina pectoris who are considered poor risks for more extensive procedures. Sympathectomy appears to be of special value in patients with angina pectoris and hypertension, and good results may be expected in a maximum of 57% of cases. Posterior rhizotomy, which has relieved pain in 95% of cases, is a formidable procedure requiring laminectomy but permits severance of the nerve fibers at one operation, and the problem of regeneration of nerve fibers is not encountered. Stellate-ganglion block and pericoronary neurectomy are rarely performed today, and experience with these procedures is limited.

It has been established beyond doubt that the blood supply to the heart can be improved by grafting vascular tissues to the heart and by provoking inflammation on the surface of the heart. Although the performance of this type of procedure may prove beneficial in some patients, the operative mortality remains high. Arterialization of the coronary sinus has been performed on a substantial number of patients but long-term follow-up studies on these cases are meager. The operative procedure appears to be technically difficult, and the operative mortality is significant. Intracardiac collateral circulation may be improved by ligation of the great coronary vein, with complete diminution of effort pain in 49% of cases.

Total thyroidectomy is no longer utilized in the treatment of angina pectoris in view of the ability of radioactive iodine to achieve the same results without the prohibitive mortality rate.

It should be emphasized that angina pectoris may be attended with variable periods of remission and that caution should be exercised in interpreting results of treatment in patients with this syndrome. (New England J. Med., Oct. 22, 1953, 8 Fenway St., Boston 15, Mass., J. F. Uricchio, M. D., and D. G. Calenda, M. D.)

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U.S. Naval Medical School, National Naval Medical Center, Bethesda 14, Maryland, giving full name, rank, corps, and old and new addresses.

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From the Note Book

1. Rear Admiral Lamont Pugh, Surgeon General of the Navy, speaking before the Annual Meeting of the Association of Military Surgeons on 9 Nov 1953, recommended the establishment of a scholarship system utilizing existing medical schools, by which the government would defray the expenses of a medical education for a selected group of such number as may be dictated by the needs of the times. (TIO, BuMed)
2. The 1953 awards of the Association of Military Surgeons presented The Founders Medal to Rear Admiral B. Groesbeck, Jr. (MC) USN, Ret., Rear Admiral W. P. Dana (MC) USN, Medical Director J. W. Cronin, USPHS, and CDR F. B. Voris (MC) USN; The Sir Henry Wellcome Medal and Prize to Maj. W. L. Craddock, MC) USAR, and honorable mention to Col. W. F. Bowers, MC, USA, and Maj. E. W. Schear, USAF(MC); The Gorgas Medal to Col. D. B. Kendrick, Jr., MC, USA, and Captain L. R. Newhouser (MC) USN; and The Louis Livingston Seaman Prize to Col. N. W. Elton, MC, USA. (TIO, BuMed)
3. A number of patients with brucellosis were treated with a series of subcutaneous injections of amphoteric terramycin in amounts not larger than 160 mg. per week. In control patients the bacteremia was uninterrupted for a period of 2-3 months; in the treated patients the percentage of positive blood cultures was only 18% 15 days after beginning treatment and these became negative in subsequent cultures. (Am. J. Med. Sc., Nov. 1953, M. R. Castaneda and C. Carrillo-Cardenas, General Hospital, Mexico City, Mexico)
4. The 29 Oct 1953 issue of The New England Journal of Medicine, in an article written by Drs. H. L. Mueller and L. W. Hill, publishes a list of laboratories manufacturing bee and wasp extracts.
5. An antimetabolite, 6-mercaptopurine, has been shown to produce good clinical and hematologic remissions in 15 out of 45 children with acute leukemia. Another 10 showed partial remission and clinical improvement. (Blood, Nov. 1953, J. H. Burchenal, et al., Sloan-Kettering Institute, New York, N. Y.)

6. A technic to abolish pain completely following hemorrhoidectomy is described in Surgery, Nov. 1953 by W.G. Gerwig, Jr., S. Alpert, C.S. Coakley, and B. Blades, The George Washington University School of Medicine, Washington, D.C.
7. Bilateral adrenalectomy can be a safe and valuable procedure. Patients may be maintained on 25 to 50 mg. of cortisone given orally each day in 2 doses. (J. Urol., Nov. 1953, W.W.S. Butler, III, J. T. Grayhack, C.L. Ransom, and W.W. Scott, Baltimore, Md.)
8. An operative procedure fulfilling the objectives of wide surgical excision, comfortable urinary rehabilitation, and cosmetic appearance in the treatment of extensive carcinoma of the posterior urethra is presented in Surgery, Gynecology and Obstetrics, Nov. 1953, J. J. Kaufman and W. E. Goodwin, University of California School of Medicine, Los Angeles, Calif.
9. A traction method of sternal stabilization, similar to that used in adults with fractured ribs and sternum, is advised in the treatment of the newborn infant who manifests sternal retraction and cyanosis in the neonatal period. (Am. J. Dis. Child., Oct. 1953, W.G. Love, Jr. and B. Tillery, Columbus, Ga.)
10. Twenty-three patients undergoing pulmonary resection for tuberculosis were given Isoniazid as the prophylactic antibacterial agent during the operative period and postoperatively for a minimum of 2 months. It is concluded that Isoniazid is a satisfactory antibacterial agent for pulmonary resection in tuberculosis. (J. Thoracic Surg., Nov. 1953, M.E. Childress, M.E. Thoren, and A.C. Daniels, Weimar, Calif.)
11. A report summarizing the problems encountered, the results obtained, the studies completed, and resulting clinical judgments of the therapeutic use of gallium appears in Radiology, Oct. 1953, M. Brucer, G.A. Andrews, and H. D. Bruner, Oak Ridge Institute of Nuclear Studies.
12. Eleven cases of primary tumors of the rib, not previously reported, with a review of the literature are presented in Archives of Surgery, Oct. 1953, L. A. Hochberg, Brooklyn, N. Y.
13. The radiological findings in a series of cases of "collagen" diseases are reviewed in California Medicine, Oct. 1953, by L. H. Garland and M. A. Sisson, San Francisco, Calif.
14. The following naval medical officers have recently been certified in their specialties: LT G. F. Nardone (MC) USN, American Board of Surgery, and LT J. M. Cole (MC) USN, American Board of Otolaryngology.

Commanding and Executive Officers of Medical Department
Activities; Division Surgeons, Marine Divisions

Hospital Ships

Officer in Command of Naval Hospital In:

USS HAVEN (AH 12)	CAPT O. H. Alexander (MC) USN
USS CONSOLATION (AH 15)	CAPT M. R. Wirthlin (MC) USN
USS REPOSE (AH 16)	CAPT G. B. Creagh (MC) USN

Naval Hospitals

National Naval Medical Center

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NavHosp	CO	CAPT G. B. Tayloe (MC) USN
	XO	CAPT T. G. Hays (MC) USN
NavMedSch	CO	CAPT E. B. Coyl (MC) USN
	XO	CAPT R. L. Ware (MC) USN
NSHA	CO	CDR W. C. Calkins (MSC) USN
	XO	LCDR G. W. Weise (MSC) USN
NMRI	CO	CAPT W. E. Kellum (MC) USN
	XO	CAPT T. L. Willmon (MC) USN
Chelsea, Mass.	CO	CAPT C. W. Stelle (MC) USN
	XO	CAPT G. A. Gray (MC) USN
Newport, R. I.	CO	CAPT J. L. Enyart (MC) USN
	XO	CAPT R. J. Vaughn (MC) USN
Portsmouth, N. H.	CO	CAPT T. J. Carter (MC) USN
	XO	CDR J. W. Trenton (MC) USN (Acting)
St. Albans, L. I., N. Y.	CO	CAPT A. T. Walker (MC) USN
	XO	CAPT W. H. Schwartz (MC) USN
Philadelphia, Pa.	CO	CAPT C. G. Clegg (MC) USN
	XO	CAPT E. C. Kenney (MC) USN
Portsmouth, Va.	CO	RADM S. S. Cook (MC) USN
	XO	CAPT G. N. Raines (MC) USN
Bainbridge, Md.	CO	CAPT R. F. Cantrell (MC) USN
	XO	CAPT C. E. Bentel (MC) USN
Camp Lejeune, N. C.	CO	CAPT C. R. Wilcox (MC) USN
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Beaufort, S. C.	CO	CAPT E. D. Hightower (MC) USN
	XO	CAPT J. V. Land (MC) USN
Charleston, S. C.	CO	CAPT J. P. Wood (MC) USN
	XO	CAPT B. N. Ahl (MC) USN
Jacksonville, Fla.	CO	CAPT E. S. Lowe (MC) USN
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Naval Hospitals (continued)

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	XO	CAPT J. R. Reid, Jr. (MC) USN
Memphis, Tenn.	CO	CAPT J. H. I. Heintzelman (MC) USN
	XO	CAPT R. K. Hoch (MC) USN
Pensacola, Fla.	CO	CAPT J. G. Wright (MC) USN
	XO	CAPT C. L. Plew (MC) USN
Corpus Christi, Tex.	CO	CAPT H. G. Young (MC) USN
	XO	CAPT H. C. Oard (MC) USN
Great Lakes, Ill.	CO	CAPT I. L. V. Norman (MC) USN
	XO	CAPT H. L. Weaver (MC) USN
Guantanamo Bay, Cuba	CO	CAPT J. W. Kimbrough (MC) USN
	XO	CDR J. J. Timmes (MC) USN (Acting)
Corona, Calif.	CO	CAPT J. Love (MC) USN
	XO	CAPT F. W. Farrar (MC) USN
Camp Pendleton, Calif.	CO	CAPT G. E. Stahr (MC) USN
	XO	CAPT E. V. Jobe (MC) USN
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	XO	CAPT H. W. Rose (MC) USN
Coco Solo, C. Z.	CO	CAPT R. K. Y. Dusinberre (MC) USN
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Yokosuka, Japan	CO	CAPT C. R. Ball (MC) USN
	XO	CAPT E. C. Aulls (MC) USN
Guam, M. I.	CO	CAPT T. F. Weinert (MC) USN
	XO	CAPT H. J. Cokely (MC) USN
NMU, Tripler Army Hosp.	OIC	CAPT W. P. Stephens (MC) USN

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Potomac River Naval Command	CAPT W. V. Clark (MC) USN

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Washington, D. C.	CO	CAPT O. A. Smith (MC) USN

Division Surgeons, FMF

1st Marine Division	CAPT W. R. Miller (MC) USN
2nd Marine Division	CAPT R. H. Walker (MC) USN
3rd Marine Division	CAPT R. R. Callaway (MC) USN

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Inspector, Naval Dental Activities Lant Coast	RADM H. R. Delaney (DC) USN
Inspector, Naval Dental Activities Pac Coast	RADM H. P. Riebe (DC) USN

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NavDentClin, Guantanamo Bay	CAPT M. A. Moon (DC) USN
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NavDentClin, Pearl Harbor	CAPT L. D. Mitchell, Jr. (DC) USN
NavDentClin, Washington, D. C.	CAPT M. M. Maxwell (DC) USN
NavDentSch, Bethesda, Md.	CAPT R. Taylor (DC) USN
NavDentClin, Guam, M. I.	CAPT B. W. Oesterling (DC) USN

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ComNavBase, Philadelphia	CAPT H. J. A. MacInnes (DC) USN
NavAirBases, 5thND	CAPT D. M. Coughlin (DC) USN
ComNavBase, Norfolk	CAPT F. G. Ulen (DC) USN
NavAirBases, 6thND	CAPT H. Meradith (DC) USN
ComNavBase, Key West	CAPT W. R. Burns (DC) USN
ComNavBase, Charleston	CAPT P. M. Carbiener (DC) USN
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ComNavOpBase, 10th ND	CAPT M. A. Moon (DC) USN
NavAirBases, 11th ND	CAPT E. G. F. Pollard (DC) USN
CG MarBks Camp Pendleton	CAPT F. E. Jeffries (DC) USN
NavAirBases, 12th ND	CAPT R. H. Barrett (DC) USN
NavAirBases, 14th ND	CAPT R. D. Koepke (DC) USN

Staff Dental Officers (continued)

ComNavBase, Pearl Harbor	CAPT L. D. Mitchell, Jr. (DC) USN
Severn River Command	CAPT C. W. Schantz (DC) USN
Potomac River Command	CAPT M. M. Maxwell (DC) USN
ComFltAct, Yokosuka	CAPT R. A. Lowry (DC) USN

Fleet Dental Officers

Fleet Air Quonset	
NAS Quonset Point	CAPT E. A. Thomas (DC) USN
Fleet Air Alameda	
NAS Alameda	CAPT R. H. Barrett (DC) USN

Dental Officers With Marine Activities

CMC HQMarCor	CAPT F. C. Snyder (DC) USN
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Division Dental Officers FMF

1st Marine Division	CAPT J. R. Justice (DC) USN
2nd Marine Division	CAPT F. M. Frates (DC) USN
3rd Marine Division	CAPT J. J. Flaherty (DC) USN

Wing Dental Officers FMF

2nd Marine Air Wing	CAPT M. A. Griffin (DC) USN
3rd Marine Air Wing	CAPT J. E. Krieger (DC) USN
1st Prov Mar-Air Ground Task Force FMF Pac	CDR J. A. Hogan (DC) USN

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New Dental Service Report Effective 1 January 1954

Department of Defense Directive Number 6040.16 of 24 Sep 1953, announced that the below-listed dental forms have been standardized for use in all dental facilities of the Armed Forces after 1 Jan 1954:

Dental Service Report, DD Form 477, 1 Oct 1953
Dental Service Report, Equipment and Facilities Supplement,
DD 477-1, 1 Oct 1953

These revised forms will replace the following dental reports commencing 1 Jan 1954:

1. All previous printings of the Dental Service Report, DD Form 477
2. Personnel Report of the Hospital Corps (for dental personnel)
(NavMed HC-4)
3. Semiannual Dental Report--Personnel, Equipment, Facilities--
(NavMed 461)

4. Semiannual Dental Officer Personnel Report, NavMed Form 785 The DD Forms 477 and 477-1 (1 Oct 1953) may be requisitioned from district publications and printing offices by activities with dental personnel regularly assigned. The new Dental Service Report is much less complicated than the one presently in use. Detailed instructions for their accomplishment is contained in BuMed Instruction 6600.1 which will be distributed in the near future. (DentDiv, BuMed)

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Recent Reports Issued by Naval Medical Research Facilities

Naval Medical Research Institute, NNMC, Bethesda, Md.

1. Modification of the Growth of Virus in the Chick Embryo by the Use of Hyaluronidase and Other Adjuvants. NM 005 048.12.01, 27 Feb 1953.
2. Discharge Characteristics of a Small Electric Eels. Memo Report 53-14, NM 000 018.06, 11 Aug 1953.
3. Filariasis in American Samoa. III. Studies on Chemotherapy Against the Nonperiodic Form of Wuchereria bancrofti. NM 005 048.08.03, 16 July 1953; IV. Studies on the Factors Influencing the Epidemiology of the Infection. NM 005 048.08.04, 26 Aug 1953.
4. Some Elastic Characteristics of Fresh and Freeze-dried Aortic Grafts. NM 007 081.10.09, 27 July 1953.
5. The Peripheral Origin of Nervous Activity in the Visual System. Lecture and Review Series, No. 53-6, 13 July 1953.
6. Reversible Association Processes of Globular Proteins: II. Electrostatic Complexes of Plasma Albumin and Lysozyme. NM 000 018.06.23, 14 Apr 1953.
7. Revascularization of the Rat Liver Following Interruption of the Hepatic Artery. NM 006 012.07.02, 27 July 1953.
8. An Interaction of Bacterial Pyrogen With Blood, Plasma, and Serum. NM 007 081.12.01, 14 Aug 1953.
9. Some Humoral Aspects of the Development of Tolerance to Bacterial Pyrogens in Rabbits. NM 007 081.12.02, 14 Aug 1953.
10. Changes in Host-Cell Preferences in Malarial Parasites and Their Relation to Splenic Reticular Cells. NM 005 048.01.06, 13 Aug. 1953.

Naval School of Aviation Medicine, NAS, Pensacola, Fla.

1. G x Time Flight Patterns in the Naval Air Training Command. Phase I. Acrobatic and Gunnery Maneuvers in Basic Training as Flown in Instructors Basic Training Unit, NM 001 059.27.01, 7 Aug 1953; Phases II and III. Acrobatic and Gunnery Maneuvers in Basic Training as Flown by Flight Students, NM 001 059.27.02, 28 Aug 1953.
2. A Study of the Effect of Omission of Radio Flight Training During Stage D Upon Advanced Instrument Flight and Advanced Radio Range Procedure Proficiency. NM 001 058.23.02, 4 July 1953.

3. Perception of Contour: I. Introduction. NM 001 075.01.04, 17 Aug 1953;
- II. Effect of Rate of Change of Retinal Intensity Gradient. NM 001 075.01.05, 17 Aug 1953.
4. The Influence of Dynamic Visual Acuity on the Visibility of Stationary Objects Viewed From an Aircraft Flying at Constant Altitude, Velocity and Direction. NM 001 075.01.03, 17 Aug 1953.
5. Electron Microscopy of Human Plasma Lipoprotein Separated by Ultracentrifugation. NM 001 057.10.04, 15 Aug 1953.
6. Stimulation of Erythropoiesis in Normal Adult Rats by a Non-protein Extract of Plasma of Anemic Rabbits. NM 001 089.01.01, 20 Aug 1953.

Medical Research Laboratory, Submarine Base, New London, Conn.

1. Effect on Auditory Acuity of Short Exposures to Submarine Engine Noise. NM 003 041.34, 18 Dec 1952.
2. Report on Calibration of Hecht-Shlaer Visual Adoptometer Filters. NM 003 041.40, 21 July 1953.

U.S. Naval Medical Research Unit No. 3, Cairo, Egypt

1. DDT Resistance in Egyptian Body Lice. NM 005 050.42.01, 1953.
2. The Bone Marrow in Acute Brucellosis: A Study of the Histopathology and the Use of Marrow Culture in Diagnosis in 30 Cases. NM 007 082.18, 1953.
3. Investigations of the Control and Biology of the House Fly and Other Insects of Medical Importance in the Middle East. NM 005 055.01.20, 1953.
4. Fly Control in Egypt. NM 005 050.49.01, 1953.

Dental Research Facility, Dental Department, Great Lakes, Ill.

1. Experimental Mouth Simulating In Vivo Conditions: Report No. 1. NM 008 013.11.01, 22 Sep 1953.
2. Chemical Studies in Periodontal Disease: XI. NM 008 013.12.01, 1 Nov 1953.

Naval Medical Research Unit No. 4, USNTC, Great Lakes, Ill.

1. Age, Height, and Weight of 2,173 Men Entering Recruit Training During 1952 at the U.S. Naval Training Center, Great Lakes, Ill. NM 003 044.01.01, 22 Jun 1953.
2. Changes in Body Weight During Recruit Training at the U.S. Naval Training Center, Great Lakes, Ill. NM 003 044.02.01, 22 Jun 1953.
3. Evaluation of Urine Titrations With Alkyl Dimethyl Benzyl Ammonium Chloride (Roccal's Solution) as an Index of Respiratory Tract Infection. NM 005.051.14.04, 7 July 1953.
4. Prophylaxis of Epidemic Parotitis: The Antibody Response Following Injection of Mumps Antigen in Varying Dosage. NM 005 051.12.01, 10 Jun 1953.
5. Antibiotic Prophylaxis of Respiratory Infections. I. Evaluation of Small Oral Doses of Penicillin and Aureomycin in the Prevention of Streptococcal and Other Respiratory Infections Among Navy Recruits. NM 005 051.15.01, 1 Aug 1953.

BUMED INSTRUCTION 6730.1

23 Nov 1953

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical/Dental Personnel Regularly
Assigned

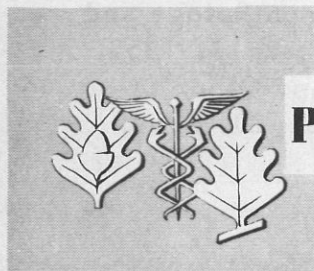
Subj: Noise protection ear plugs; procurement and fitting of

This directive promulgates information concerning the procurement, distribution, and fitting of noise protection ear plugs by Medical Department personnel.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

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PREVENTIVE MEDICINE SECTION

Communicable Disease Control

Additional Notes on Tattooing

A recent communication dated 4 November, from the medical officer of a cruiser reported that, of a total of 13 patients admitted for infectious hepatitis during a cruise in Far East waters between March and October 1953, 5 were tattooed in the same shop at Hong Kong, China, during the period 19 to 26 May 1953. None of the 5 patients had been given plasma or received an inoculation recently. Four of the 5 were admitted in August and 1 in September. The correspondent requested that this information be relayed to ships presently assigned to the Western Pacific area.

In Newport, R.I., in September of this year, 3 tattooing parlors were placed out of bounds to all Armed Forces personnel, after a medical inspection which followed complaints of skin infections among tattooed personnel of

a destroyer. The investigation of the shops revealed that all 3 were dirty, with inadequate or nonexistent sterilization methods. On October 5, the city passed an ordinance to license and regulate tattooing and tattooing establishments, limiting operations and effecting a marked improvement in sanitary conditions in the shops. (See also Medical News Letter, Vol. 21, No. 5 and Vol. 22, No. 9)

Tuberculosis Control

Tuberculosis Among Naval Personnel in the Far East

During 1952 99 individuals were admitted to the U.S. Naval Hospital, Yokosuka, who either had active pulmonary tuberculosis or were suspected of having pulmonary tuberculosis. There were 80 more such individuals admitted during the first 6 months of 1953. The admission of so large a number of patients to the sick list in this category was considered to be highly significant, and an attempt was made to determine what epidemiological factors may have been responsible.

There were 22 patients available for interview. Eighteen of them were found to have a suspicious chest lesion on a routine x-ray, and only 6 of these admitted to any symptoms. Most of the others, including 3 of those who had extensive cavitation, had been entirely asymptomatic. Seventeen of the 22 patients had a diagnosis of minimal pulmonary tuberculosis, while the others were considered to be moderately advanced.

Six of the 22 patients were found to have suspicious chest lesions either while en route to Japan or shortly after arrival there. Of the 16 remaining patients, who are presumed to have had negative chest x-rays on arrival in the Far East: 6 gave a history of duty in Korea; 10 gave a history of having had duty either in Japan or on ships making liberty there, and 4 of these gave a history of having had at least 1 continuous social contact; 6 patients also gave a family history of tuberculosis contact in the United States.

An attempt is being made by FEDCU 2 to ascertain the state of health of the local contacts of the 4 cases noted. Until such information is available it can only be presumed that Japanese contacts constitute a significant, although not major, part of the Navy's tuberculosis problem in the Far East. (Fleet Epidemic Disease Control Unit No. 2.)

Training and Visual Aids

Food-Sanitation Program Progresses in Fifth Naval District

Three officers of Preventive Medicine Unit No. 2 participate as guest instructors each month in a Food Service Employees School which is con-

ducted by the medical department of the U.S. Naval Station at Norfolk, Va. Each of the officers conducts his lectures on subjects taken from NavPers 91921. Over 400 individuals attended the school in October.

Industrial Medicine

Suggested Use of Welding Mask Attachment to Protect Paint Strippers From Toxic Vapors

An article in Vol. 22, No. 5 of the Medical News Letter, dated Sept. 4, 1953, discussed exposure to paint-stripping compounds. The hazards of breathing toxic vapors from such substances as dichloromethane, dichloroethyl ether, phenols, and ammonia, generated during the application of paint strippers, were discussed. The use of respirators reduced exposures but at the same time reduced the rate of production and even resulted in increased labor turnover.

In October 1953 a letter was received by the Bureau of Medicine and Surgery from Captain Charles M. Parker (MC) USN, SMO, Naval Station, New Orleans, La., describing a remedy for this situation in the form of a welding mask attachment that has been patented. A drawing of the device was enclosed. The letter is quoted in part below:

"While working at the Navy Yard, Pearl Harbor, T.H., during the early years of World War II and salvaging the vessels damaged by the Japanese attack in December 1941, the undersigned encountered problems similar to those described in the article on exposure to paint-stripping compounds in the September 4 issue of the Medical News Letter. Respirators proved unsatisfactory for the same reasons. Closed face masks, with clean fresh air supplied, would keep out the toxic gases, but the discomfort to the wearer caused by a tight-fitting face plate, sweating, and irritation of the nose and eyes caused by air blowing directly on them, soon placed these masks in a class with the respirator. Men refused to wear them for any appreciable time.

"A straight copper tube with multiple holes was mounted in the top of a welding and burning hood and clean air was supplied from an outside source. This failed because while it swept the face it caused foul toxic air to be sucked into the hood, nullifying its good effect.

"After further study, a rectangular copper tube 1/4-inch in diameter with small openings in the perimeter was placed in welding and burning hoods so that the eyes and nose were within the rectangle. Air was supplied from an outside source under 15 to 20 pounds per square inch. The air leaving the rectangular-shaped tubing swept the mask to supply air for breathing to the wearer. This proved to be the solution to the problem. The wearer was comfortable as well as safe. A test of this attachment was made by burning and welding inside a closed testing compartment (booth) about 6 feet high and

4 feet square. The attachment worked satisfactorily as long as the wearer could see his target through the smoke generated by the burning or welding. Even when the target could not be seen, the wearer was comfortable. A small suction ventilating apparatus was placed in the booth and the testing was resumed. The results were satisfactory and the mask then was put to the test of working in compartments on ships undergoing repair. In a compartment on one cruiser in dry-dock, where a burner or welder had been able to work only 10 minutes out of each hour, by the use of the air-supplied mask described, 4 to 8 men could work for an indefinite period provided that space was available for movement and operation.

"It is felt that the problem discussed in the News Letter article mentioned above can be solved by the use of the above-described air attachment, made of either metal or plastic, and installed in a clear plastic face plate or shield.

"There are other patented attachments on the market, but they operate on the principle involved in face masks and consequently are as objectionable.

"The problem of noxious fumes presented in the above-mentioned article is comparable to the one for which the enclosure was designed. Since the enclosure enabled the Navy to overcome such problems and to rush repairs of ships at the Navy Yard, Pearl Harbor, T. H., during World War II, it is believed it will again be of value in solving the problem arising from exposure to paint-stripping compounds during major overhaul of military aircraft."

It is believed that this attachment may be adapted for the use of paint strippers and other industrial workers who are similarly exposed to toxic substances. Specifications and other details will be furnished to those interested upon request.

Insect and Rodent Control

Control of House Mice

The common house mouse is more destructive than any of the 300-odd kinds of native mice found in North America. This introduced rodent had its origin in Asia and has followed civilization to all parts of the world. It is a source of annoyance and damage in nearly every locality where food, clothing, or manufactured goods are processed or stored. Losses of grain and feed on farms, and cereal products in food plants, warehouses, stores, and homes annually cost the public many millions of dollars. Total damage thus inflicted probably exceeds that caused by any other destructive animal except the Norway rat.

Trapping. -- Light infestations of mice can be removed through the use of several ordinary snap traps. These should be placed at right angles along walls between objects, or by holes and damaged materials, so that the trigger mechanism intersects the probable route of travel.

One of the most attractive baits is peanut butter smeared over the trigger surface. Other good baits are cake, doughnuts, flour, bacon, nut meats, cheese, and soft candies, particularly milk chocolate or gum drops. A sprinkle of rolled oats or dry cereal over and around baited traps is sometimes helpful. Trap-shy individuals may be caught by hiding the whole trap under a thin layer of flour, rolled oats, or similar light-weight material. At times a small wad of cotton attached to the trigger may be used to catch a mouse in search of nest material.

Poisoning. -- Poisonous chemicals are helpful in controlling large infestations when trapping is impractical. No one poison or bait is universally effective, and mice tend to develop a tolerance or prejudice to most control materials after prolonged use. For this reason, it is often desirable to change periodically both the kinds of poisons and the food ingredients used in the bait. As in the case of traps, bait placements should be made at closely spaced intervals.

The selection of poisons should be consistent with safety requirements. Anticoagulant rodenticides such as warfarin and similar products cause death through internal bleeding. They are the least hazardous of the poisons and are highly effective, but are rather slow acting. Small amounts of such poisons must be consumed daily for 5 days or more to produce death, and several weeks may elapse before complete control is attained. These materials may be purchased locally in the form of ready-mixed baits or as a 0.5% poison concentrate. Cereal-type baits such as mixtures of 2 parts fresh yellow cornmeal and 1 part rolled oats are recommended. Attractiveness of baits generally may be improved by the addition of 5% confectioner's sugar and 5% vegetable oil. One part of the 0.5% poison concentrate should be mixed with 19 parts of the bait ingredients to provide the recommended concentration of 0.025%. Because prolonged exposure is essential, it is important to replenish baits at frequent intervals. Precaution should be taken to prevent contamination of food and to protect pets from accidental poisoning by the careful placement of baits in protected stations and by the prompt and careful disposal of dead mice.

When quick control is desired and danger of accidental poisoning is not likely, a fast-acting poison such as strychnine may be preferred. Strychnine is usually sold commercially at 0.5% concentrations in grain or cereal-type baits. Teaspoonful quantities are usually ample for each location. However, strychnine should not be exposed repeatedly because mice soon develop an aversion or tolerance to it.

Another method involves application of DDT in the form of a 50% micro-fine dust. If the dust is sprinkled or blown generously into holes and for several feet along concealed runways, it is inhaled by the mice or picked up on their feet and fur and later ingested when the animals clean themselves. Two weeks may elapse before complete control is attained. This technique is particularly helpful for the protection of seed grain in storage, but should not be employed in locations which would permit the contamination of foods or feed.

Other highly poisonous chemicals are useful in controlling heavy infestations, but, because serious hazards may result from their improper handling, they should be applied by professional exterminators only.

Other measures. --Mice thrive where food is plentiful and harborages are present. Any steps that reduce their supply of these two requirements will discourage their numbers. Good housekeeping is imperative. The elimination of hiding places is particularly important, and holes in walls, floors, or foundations should be sealed off or screened over to prevent new infestations. Migrations from adjoining fields often occur with the coming of cold weather in the fall of the year.

Certain odors and substances obnoxious to mice are of value in repelling them from stored products. Flake naphthalene is one of the most effective of the deterrents and when scattered over and around bags of seeds, overstuffed furniture, books, clothing, and other articles, may protect them effectively from mouse depredations. Because of the odor it is not advisable to use naphthalene to repel mice from foodstuffs. Insulating materials, such as sawdust, ground paper, and the like, may be protected by the addition of 1 part ammonium sulphate to 4 parts of the insulation.

Characteristics and habits of mice. --The technical name for the house mouse is Mus musculus, which means "little thief." Its typical color is dark gray on the back, gradually changing to ashy gray on the abdomen. Variations occur all the way from black to an occasional albino. The ears are large and prominent. The tail is small and slender, being about the length of head and body. House mice are among the smallest of rodents, weighing only about 3/4 ounce. In some instances they may be confused with the native white-footed mice which at times invade buildings in semiwooded areas and cause similar damage.

The female may give birth to young during any month of the year, especially in warm and secluded locations. The gestation period is approximately 21 days, and from 5 to 8 litters averaging 5 young each are born during a single year. Juveniles are dependent upon the mother for about 3 weeks and reach maturity in 2 or 3 months. Although caged mice may live for 2 years or longer, it is probable that few wild mice survive more than a year.

These rodents eat the same foods as man but, under natural conditions, are regarded primarily as seed eaters. Foods high in protein or sugar content, such as peanut butter, bacon, ground meat, cheese, cookies, and candy are readily consumed. Diet varies in different environments, and some mice will subsist on such items as live insects, starch in clothing, and glue in bookbindings. Water requirements are slight, and they can live for many months on a dry-grain diet. The animals are light, intermittent, erratic feeders, and they must eat several times during a 24-hour period. Depending upon human interference, mice may be active during either day or night. If adequate food and shelter are available, their range is very limited and they may not travel more than 10 or 20 feet from their nest site.

House mice and their parasites are known to carry several human diseases. Because they live in closer proximity to man than any other wild animal, their presence is important from the standpoint of public health. Probably the greatest hazard is contamination of food, and instances of food poisoning in humans are directly traceable to mice. Tremendous quantities of stored and processed food are annually rendered unfit for human use because of the presence of mouse droppings, urine, and hair. Many seizures by food and drug officials result from this type of pollution. Filth, bacteria, and other substances transported on the fur and feet of mice spread contamination throughout homes and business establishments. (Department of the Interior, Fish and Wildlife Service, Wildlife Leaflet 349, Oct. 1953)

General Sanitation

Refrigeration of Dairy Products During Transportation

During the past summer, a Washington, D.C. dairy encountered considerable difficulty in delivering milk to activities in the Norfolk, Va., area. Temperatures of the product, upon arrival were in many instances in excess of 50° F. The chief cause of this difficulty was inadequate refrigeration in the delivery vans. The dry ice which was the only refrigerant used by the dairy did not maintain an even temperature throughout the vans. As a result, warm "spots" existed in some sections of each load, while the milk in other sections was frozen.

In an effort to avoid rejection of the shipments, the drivers were in the habit of using large amounts of dry ice to keep the temperatures low. This resulted in high concentrations of carbon dioxide, which, through some process that is not entirely clear, found its way into the milk. Upon arrival at its destination the milk had titratable acidity of 0.20% to 0.25%. Many complaints were received of "off flavors," "sour" milk, "bitter" milk, et cetera. Actually the taste was one of carbonation.

The problem was completely resolved when the vendor converted to mechanically refrigerated trucks for this service.

* * * * *

Staphylococcus Food-Poisoning Outbreak

An outbreak of food poisoning involving 61 individuals occurred recently at a naval base. The personnel who became ill had all eaten in the same mess at approximately the same time. Within 3 hours, the classical symptoms of staphylococcus food poisoning appeared.

The incriminated food was sliced baked ham. Gelatinase- and coagulase-positive, mannitol-fermenting Staphylococcus aureus was isolated from

This organism was also isolated in almost pure culture from the vomitus of patients. The noses and throats of food handlers were cultured, but neither amylase- nor coagulase-positive staphylococci could be isolated.

The Preventive Medicine Unit, which investigated the outbreak, reports that, several days before this outbreak occurred, the Unit submitted to the sea provision supply officer for his weekly bulletin an article on the proper handling of hams and the many implications of ham in food-poisoning outbreaks.

* * * * *

Outbreak of Chemical Food Poisoning

An outbreak of food poisoning probably caused by contamination of fruit punch was recently investigated by the Los Angeles City Health Department.

Approximately 530 persons attended a fashion show in Los Angeles, after which refreshments were served consisting of grape punch and cookies. Illness among several persons attending the gathering was reported to the Health Department the same day.

Investigation revealed illness characterized by abrupt onset of nausea. Mouth symptoms, stomach distress, retching, and diarrhea occurred in some of the persons affected. Onset of symptoms in most of the cases occurred within 15 minutes following consumption of the punch. Investigation revealed an attack rate of 41% among the consumers of punch. None of the persons who had omitted the punch developed any symptoms of illness.

The punch was prepared the preceding day by mixing 2 gallons of grape concentrate with 10 gallons of water in a clean 20-gallon galvanized can. The mixture was ladled, transferred to pitchers, and poured into paper cups which were placed in a refrigerator. Following preparation of the first batch, the second batch was prepared in the same ratio of 5 gallons of water to 1 gallon of grape concentrate. The second batch, however, was allowed to remain in the galvanized can in the refrigerator for 24 hours during which time it acquired an unusual taste.

Although none of the suspected punch was salvaged for laboratory analysis, its preparation was simulated under the same conditions during the investigation. Laboratory tests of the simulated punch revealed a pH of 2.5 and a zinc concentration of 819.5 parts per million--a concentration high enough to cause illness.

The facts elicited by the investigation revealed that this outbreak of illness probably was caused by chemical contamination of drink by zinc, the principal metal in the galvanized can in which the punch was stored.

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Problems? Solutions?

Because the Preventive Medicine Section of the Navy Medical News Letter is intended to disseminate helpful information to those in the field, your questions on any subject of preventive medicine or your experiences in solving problems are invited. Brief articles of from 200 to 500 words are desirable. It is no longer possible to use photographs with these items but pen-and-ink drawings and graphs may be included.

Items should be addressed to Preventive Medicine Editor, Code 72A, Bureau of Medicine and Surgery, Department of the Navy, Washington 25, D. C.

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Permit No. 1048

OFFICIAL BUSINESS

WASHINGTON 25, D. C.

DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, \$300